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METHOD TO DETECT THE DISTRIBUTION OF SERVICE TEMPERATURES IN A TECHNOLOGICAL PROCESS

Field of the art

The present invention concerns the technology of procedures to detect the distribution of service temperatures in the course of a technological process, included in the International Classification G01 J.

State of the art

It is known the application of sensors to detect occasionally the thermologic parameters which concern the course of technological processes.

The present invention suggests a method to detect the distribution of service temperatures in a technological process through the automatic and programmable explorative execution performed through adjustable equipment connected to a protective structure with shutter which contains a pointer device and a radiation sensor, which after having performed the detecting of thermologic parameters of process, sends them to a computer which processes, visualizes and registers them to control and regulate the distribution of the service temperatures in the course of the process.

Description

The invention is now described with reference to the schematic figures of the drawings attached as a not limiting example.

Figure 1 represents schematically the protective structure with the shutter (3) in closed position.

Figure 2 represents schematically the protective structure with the shutter (3) in open position.

One can notice the presence within the protective structure of a pointer device (5) and of a radiations sensor that, after having performed the detecting of the thermologic parameters of the process, sends them to the computer equipment (9) that processes them and registers them to control and regulate the distribution of the service temperatures at the wall's surface (8).

In the figures each single detail is marked as follows:

- 1 indicates an adjustable equipment whose explorative excursions, programmed by the computer (9), are automatically performed;
- 2 is a protective structure;
- 3 is a shutter;
- 4 is a radiations sensor to detect the thermologic parameters of the process to be inspected;
- 5 is a pointer device to place the detecting;
- 6 indicates the connecting cables of the computer equipment;
- 7 indicates the pneumatic connection to allow the introduction of air in the protective structure;
- 8 is a wall at whose surface the distribution of the service temperatures should be detected;
- 9 indicates the computer equipment dedicated to the following functions:
 - management of the program of automatic excursions of the adjustable equipment (1);
 - acquisition and processing of the thermologic parameters detected by the sensor (4) and their transduction in temperature values;

- visualization and mapping of the distribution of the temperatures' value upon the explored surface (8);
- control and regulation of the technological process to optimize the distribution of the service temperature.

The evidence of the figures highlights the simplicity and the reliability of the procedure which can be purposely applied in metallurgic plants, especially in die-casting and molding processes.

It should be pointed out the importance of the fact that the shutter 3, opening only when the detecting is performed, protects always the sensor 4 and the pointer 5 from the environmental disturbances of the metallurgic processes.

Furthermore, it should be pointed out that the resulting mapping of the values of the process temperatures allows to have a synoptic view of the actual conditions of the process. It also allows the simultaneous detecting of possible critical zones which require more attention in the regulation of the cooling system.

The invention could be realized with technological solutions and with structural proportioning and dimensioning which could fit different technical needs.

All the methods to detect the distribution of service temperatures in a technological process that includes, which will feature the characteristics as basically described, shown and hereinafter claimed, will be considered part of the protection sphere of the present invention.